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RESEARCH AID

ESTIMATED FLOORSPACE OF MOSCOW AIRFRAME PLANT NO. 381



CIA/RR RA-35

14 July 1958

CENTRAL INTELLIGENCE AGENCY
OFFICE OF RESEARCH AND REPORTS

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CTA/RR RA-35

(ORR Project 33.1748)

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FOREWORD

This research aid, one of a series evaluating current floorspace of Soviet airframe plants of the former Ministry of the Aviation Industry (Ministerstvo Aviatsionnoy Promyshlennosti -- MAP), is based primarily on metrical analysis* of World War II German photography. Supplementary intelligence data also have been used in an attempt to ascertain the composition and functions of the individual plant buildings.

* Determination of measurements by the use of aerial photographs.

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CIA/RR RA-35
(ORR Project 33.1748)

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ESTIMATED FLOORSPACE OF MOSCOW AIRFRAME PLANT NO. 381*

Summary

The total floorspace of Moscow Airframe Plant No. 381 in the USSR is estimated to be 940,000 square feet (sq ft).** The plant has a final assembly area of approximately 60,000 sq ft, or about 6 percent*** of the total floorspace. The administration area of the plant is believed to comprise a minimum of 64,000 sq ft and the multistory area of the plant 280,000 sq ft, or about 7 percent and 29 percent, respectively, of the total floorspace. Within the plant, there is a minimum of 190,000 sq ft of storage area,**** or less than 20 percent of the total floorspace.

With an over-all area of about 2.1 million sq ft and a total estimated roof area of about 660,000 sq ft, the plant has a building density† of more than 32 percent.

1. Location.

Moscow Airframe Plant No. 381 (55°47' N - 37°33' E) is located in the USSR in Leningradskiy Rayon, Moscow, and is bounded by Central Airfield, by Moscow Airframe Plant No. 30, by Leningradskoye Shosse (highway), and by Botkinskiy Proyezd (street). It is screened from Leningradskoye Shosse by a high wall and separated from Moscow Airframe Plant No. 30 by a fence. 2/

* Based on aerial photography. (See Figure 1, following p. 2.) 1/
(For serially numbered source references, see Appendix D.) The estimates and conclusions contained in this research aid represent the best judgment of ORR as of 1 May 1958.

** All figures dealing with square footage which are used in the text of this research aid are rounded to two significant digits.

*** All percentages are computed with actual figures.

**** No attempt has been made in this research aid to distinguish between warehouse space and storage space in buildings other than warehouses.

† The term building density represents the proportion of the total roof area of an airframe plant to the area of the total plant site expressed as a percentage.

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2. History.

The history of Moscow Airframe Plant No. 381 is long and varied. An airframe plant first was established at this site in 1924, but in the earliest years there seems to have been little production. In 1929 the number "39" was assigned to the plant, additional buildings were constructed, and the manufacture of experimental aircraft was undertaken. The name "Menshinskiy" was added to the identification in 1933. 3/

In 1939 the manufacture of experimental aircraft was replaced by mass production of combat models. In October 1941, however, most of the tools and many of the personnel of Airframe Plant No. 39 were evacuated to Irkutsk. The evacuated buildings then were occupied by Airframe Plant No. 81, a repair group formerly stationed at Tushino, and combat aircraft were repaired and modified at this plant. In mid-1943, Airframe Plant No. 381, located originally at Leningrad and later at Nizhniy Tagil, took over these facilities and undertook the production of combat aircraft. 4/

Consumer goods and experimental aircraft were manufactured, and aircraft were modified at the factory in the immediate postwar years. 5/ In 1950 and 1951, Airframe Plants Nos. 30 and 381 were amalgamated, 6/ and the separate identification No. 381 may have been dropped. Because of the location, layout, and construction of the plant buildings, it seems reasonable to assume that parts are produced at Airframe Plant No. 381 for Airframe Plant No. 30 and that possibly prototype aircraft are manufactured at Airframe Plant No. 381.

3. Description.

The plant site of Moscow Airframe Plant No. 381, occupying an area of approximately 2.1 million sq ft, is roughly rectangular. The major axis is oriented in a west-northwest direction, parallel to Lenin-gradskoye Shosse. (See Figures 1 and 2.*) Analysis of available information indicates a total estimated roof area of about 660,000 sq ft and a multistory area of nearly 280,000 sq ft. Total floorspace is estimated to be a little less than 940,000 sq ft,** 29 percent of which is multistory area.

The plant includes approximately 64,000 sq ft of administration area and approximately 190,000 sq ft of storage area, or about 7 and 20 percent, respectively, of the total floorspace. With a plant site of 2.1 million sq ft and a total roof area of 660,000 sq ft, the building density is about 32 percent.

* Following p. 2.

** See Appendix A.

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Figure 1

USSR: VERTICAL PHOTOGRAPH OF MOSCOW
AIRFRAME PLANT NO. 381



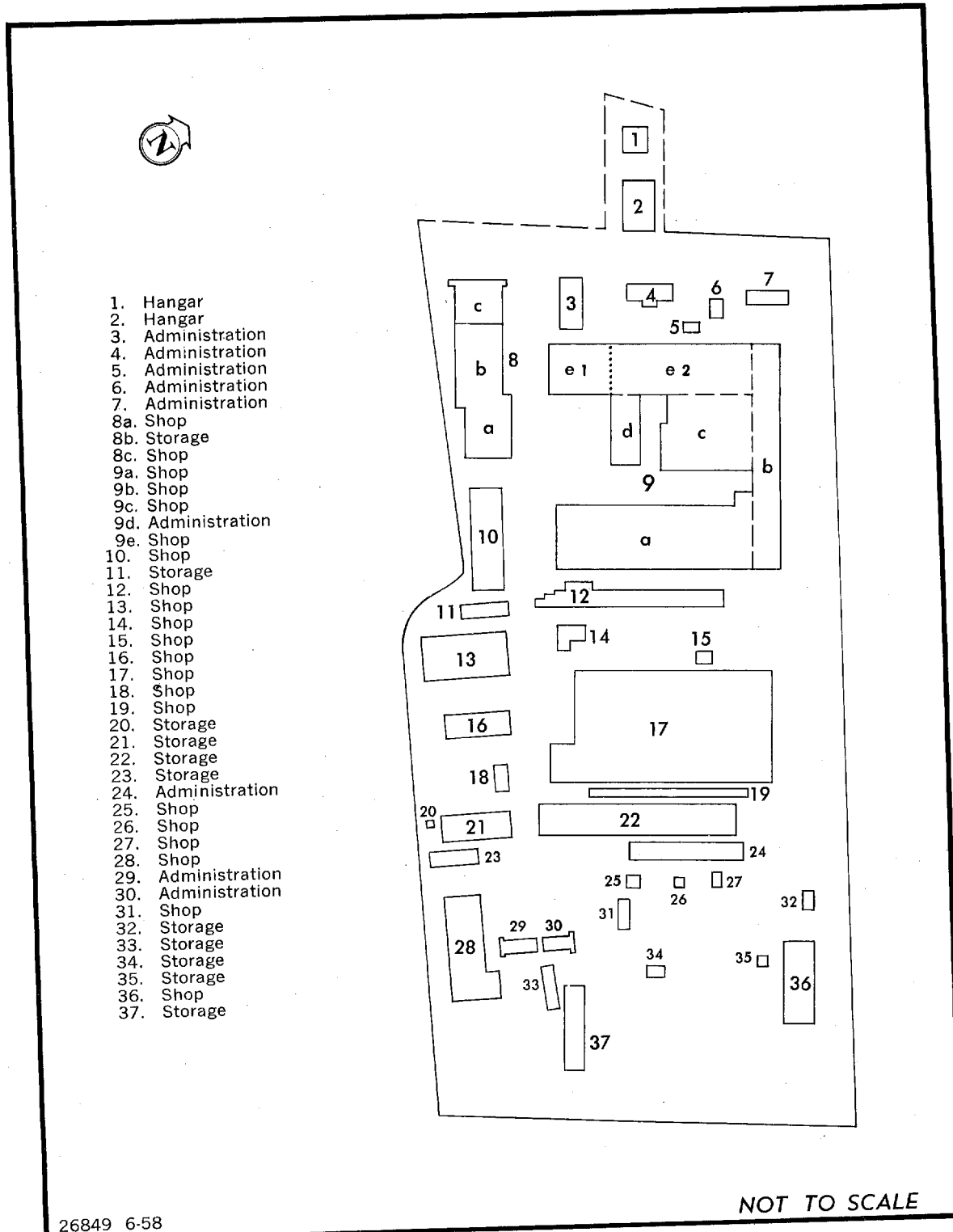
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Figure 2

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USSR: LAYOUT OF MOSCOW AIRFRAME PLANT NO. 381



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Within the plant site, there is room for construction of several buildings with a total roof area of at least 150,000 sq ft.

The buildings of Moscow Airframe Plant No. 381 vary both in construction and in type of roof.* The plant is serviced by railroad spur lines and by good road and tram facilities.

4. Final Assembly.

The former final assembly area of Moscow Airframe Plant No. 381 is located in the northwest wing of Building No. 9.** 7/ This wing, approximately 510 feet (ft) long by 118 ft wide, covers an area of 60,180 ft, or about 6 percent of the total floorspace. The height of the building is about 49 ft. One-third of the building is covered by a monitor roof; the remainder, by a curved roof.

5. New Construction (Since 1947).

Construction has been reported in the southeast portion of the plant area. 8/ Because the information is not clear and because the construction does not seem to have been extensive, new construction has not been included in this research aid.

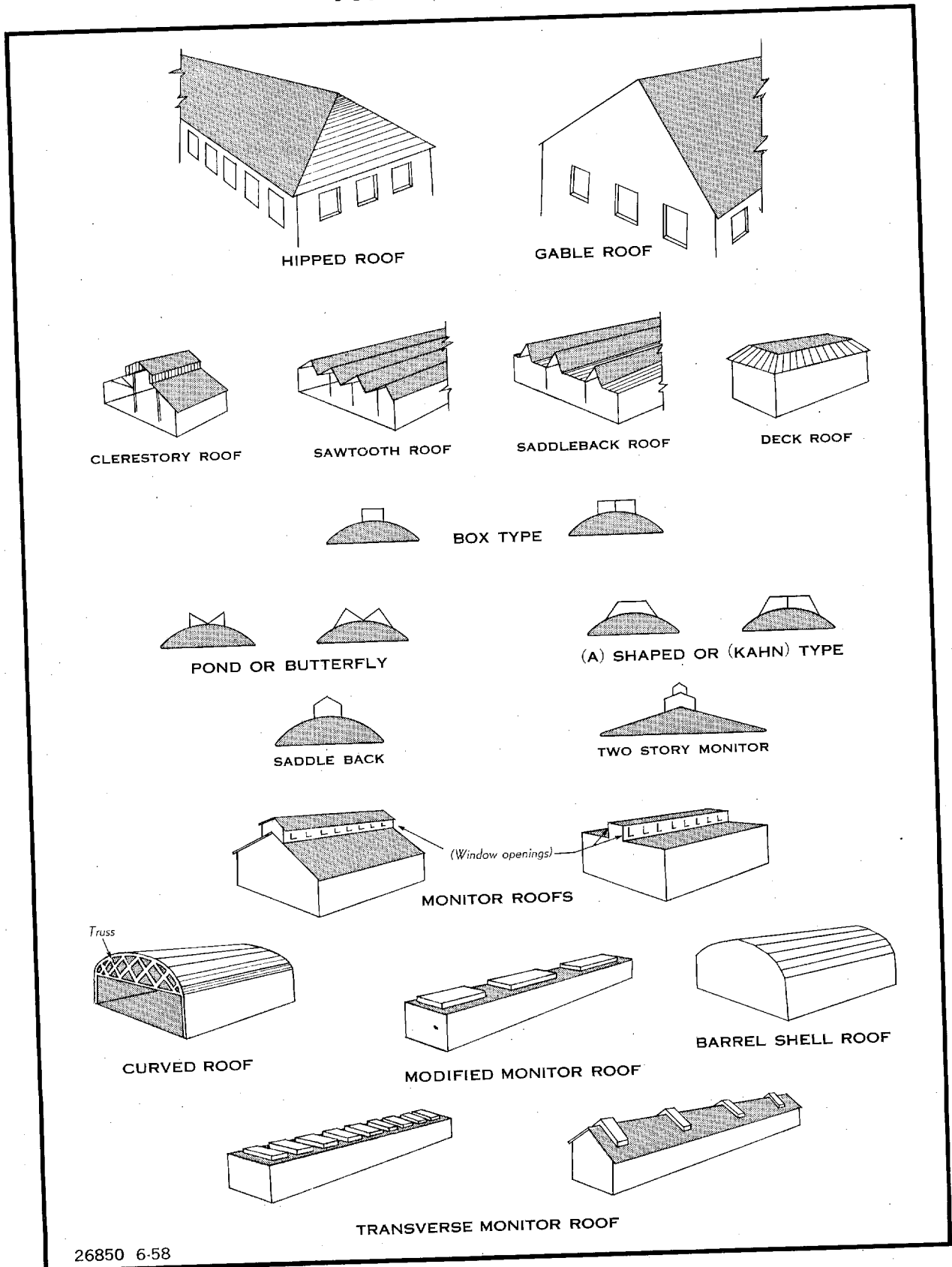
* For types of roof, see Figure 3, following p. 4.

** Building numbers refer to the designations in Figure 2, following p. 2, above.

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TYPES OF ROOFS

Figure 3



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APPENDIX A

COMPOSITION OF THE FLOORSPACE OF MOSCOW AIRFRAME PLANT NO. 381 a/*

* Footnotes for Appendix A follow on p. 7.

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APPENDIX B

METHODOLOGY

On the basis of available intelligence an effort was made to determine the function of each building in Moscow Airframe Plant No. 381. Buildings within the plant site are listed in Appendix A.*

German vertical photographs of 1942 were used to determine the roof area and the physical layout of the plant. Metrical analysis of this photography provided an estimate of the total roof area of the plant. In the computation of this total, little allowance could be made for multistory buildings. To compensate for this factor, intelligence information, primarily from a former official of the plant, was used. Whenever functions of buildings were unknown or uncertain, the best judgment of the analyst was used to provide an estimate.

P. 5, above.

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APPENDIX C

GAPS IN INTELLIGENCE

The accuracy of the estimates of the floorspace of Moscow Airframe Plant No. 381 is impaired by a lack of recent information. German vertical photographs of 1942 are available, and from these the roof area and the physical layout of the plant as it was during World War II can be computed. A lack of current photography precludes further study of the plant by this means.

Interrogation of a former plant representative to the Soviet Air Force was most useful, and interrogations of repatriates also were of value. Since 1947, however, there has been little firm information concerning possible new construction in the area of Moscow Airframe Plant No. 381.

The present identification and function of Moscow Airframe Plant No. 381 is not known with certainty, and more information would be useful.

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APPENDIX D

SOURCE REFERENCES

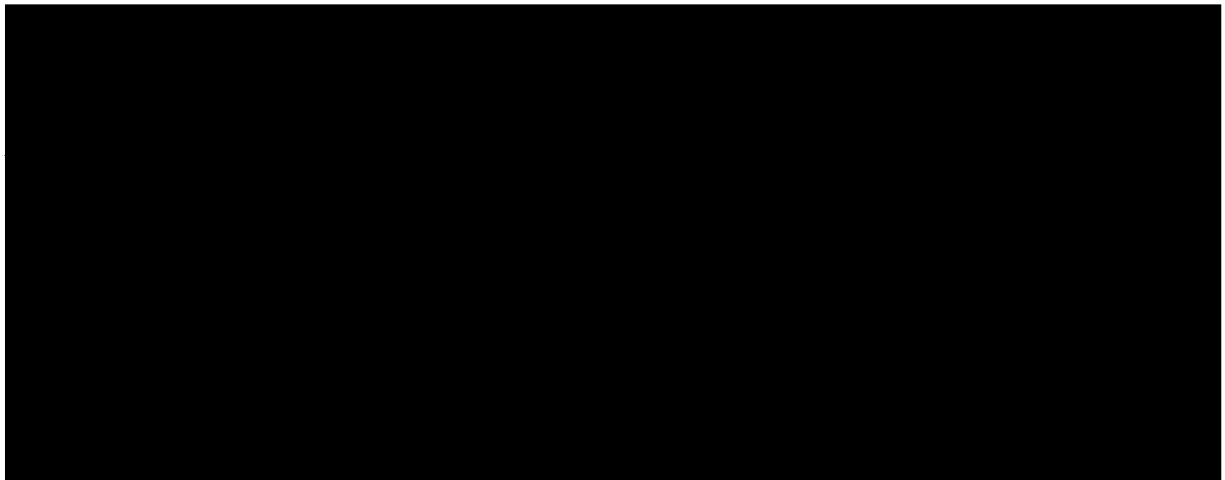
Evaluations, following the classification entry and designated "Eval.," have the following significance:

<u>Source of Information</u>	<u>Information</u>
Doc. - Documentary	1 - Confirmed by other sources
A - Completely reliable	2 - Probably true
B - Usually reliable	3 - Possibly true
C - Fairly reliable	4 - Doubtful
D - Not usually reliable	5 - Probably false
E - Not reliable	6 - Cannot be judged
F - Cannot be judged	

"Documentary" refers to original documents of foreign governments and organizations; copies or translations of such documents by a staff officer; or information extracted from such documents by a staff officer, all of which may carry the field evaluation "Documentary."

Evaluations not otherwise designated are those appearing on the cited document; those designated "RR" are by the author of this report. No "RR" evaluation is given when the author agrees with the evaluation on the cited document.

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